

Cypraea tigris Linnaeus, 1758

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IDENTIFICATION

Order : **Littorinimorpha**

Family : **Cypraeidae**

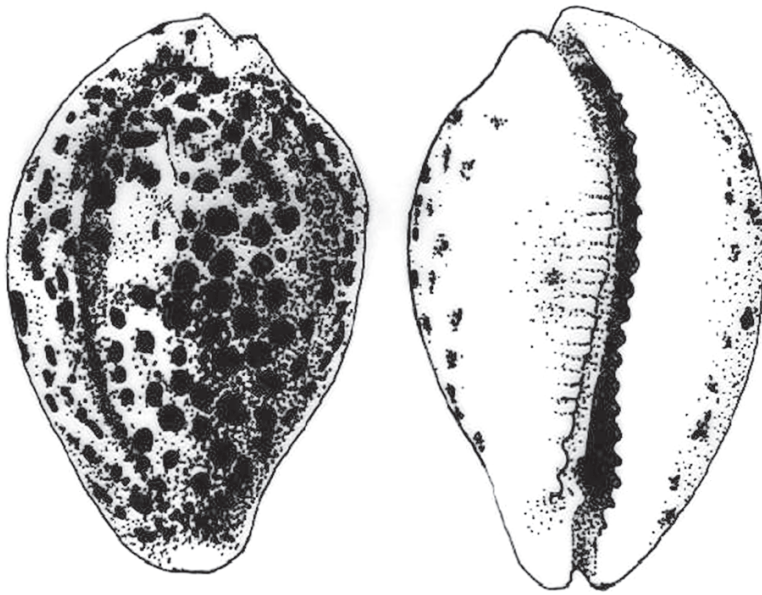
Common/FAO
Name (English) : **Tiger cowrie**



Local names: Not available

MORPHOLOGICAL DESCRIPTION

The tiger cowrie is a large, oval, dextral gastropod having a glossy and heavy shell. Dorsal side of the shell is pale in colour with dark circular spots. The ventral shell opening has a serrated margin. The mantle has two lateral extensions which can extend and cover the entire dorsal surface of the shell. The extensions meet at the midline of the dorsal surface of the shell. The mantle can be retracted into the shell through the ventral shell opening. The mantle has pin-like white-tipped projections on its surface.



PROFILE

GEOGRAPHICAL DISTRIBUTION

The tiger cowrie is distributed along the Indo-Pacific region, from the eastern coast of Africa to Micronesia and Polynesia, the Coral Sea and around the Philippines. It is also found in Australia from northern New South Wales to northern Western Australia, Lord Howe Island. In India it is seen along the south-east coast and the Andaman and Nicobar Islands.

HABITAT AND BIOLOGY

They are found at a depth range of 10 and 40 m, often associated with live branching coral colonies, such as *Acropora*. They spend most of their time either hiding under rocks or dead corals on the reef. At night, it comes out in search for food. Even though it looks harmless, it preys using its many rows of teeth to crunch and scrape up food. It is gonochoric and is a broadcast spawner. Embryos develop into planktonic trochophore larvae and later into juvenile veligers, before becoming fully grown adults. Adult measures up to 15 cm in length.

BREEDING IN CAPTIVE CONDITIONS

The broodstock development, breeding and larval rearing of *Cypraea tigris* was carried out on an experimental basis at Tuticorin R. C. of CMFRI. Brooders collected from wild were stocked in 1 t capacity tank with 750 l water. Sand was provided in bottom of the tank up to a height of 10 cm. The tank was provided with re-circulatory facility with 300 % water recirculation every day. The stocking density was 6 nos./750 l. They were fed on either with live macroalgae like *Ulva* spp. or with live clams.

Brooders with size and weight ranging from 83 to 96 mm (average size 89 mm) and 165 - 230 g (average weight 197 g) respectively spawned in captivity without any induction. The spawned egg case was pale grey in colour and each egg case was 2,550 μm in length and 1,440 μm in breadth. A single brooder laid approximately 560 cases. The egg cases turned dark grey after 4th day of egg laying and active veligers were seen within the egg cases. Incubation period of the captive laid egg cases was around 5 days. The veliger larvae emerged out after 5 days of egg laying.

LARVAL REARING

The size of the veliger was 550-590 μm . The veligers were reared in glass rearing containers at a stocking density of 100 nos./l. It was fed daily with *Isochrysis galbana* during morning hours. Larvae grew to 635-703 μm (668 μm) on 6 dph, 762-776 μm (769 μm) on 9 dph and an average of 912 μm on 14 dph. Till 14 dph most of the larvae retained their cilia but their activity was reduced. The foot became more prominent and frequently started protruding from the shell. The shell colour turned to brown. Survival of the larvae was observed for only 16 days post hatch.

FOOD AND FEEDING

It is an omnivore, feeding on both plants and animals. Juveniles eat turf algae and sponges, while adults eat fire coral and anemones.

GROWTH RATE

Information not available

DISEASES AND CONTROL MEASURES

Major problem in larval rearing is ciliate infection. Larvae shell severely infested with *Vorticella* sp. becomes inactive and rest on the tank bottom.

PRODUCTION, MARKET AND TRADE

PRODUCTION

Information not available

MARKET AND TRADE

The tiger cowrie forms food in many parts of its distribution range and its shell is used in the shell craft industry.

CHALLENGES TO MARICULTURE

Only experimental trials on culturing this species have been tried out in India which could not complete the larval cycle. Hence further research on ensuring larval survival needs to be carried out.

FUTURE PROSPECTS

The tiger cowrie is exploited in many countries because of its ornamental value. The species is also under threat due to destruction of coral reef habitats in its distribution range. Development of culture techniques is essential for meeting the demands of the ornamental shell industry as well as to conserve wild stocks of the species.

SUGGESTED READING

<http://eol.org/pages/2869722/details>

<http://www.marinespecies.org/aphia.php?p=taxdetails&id=216843>

<http://www.sealifebase.org/summary/Cypraea-tigris.html>

Jagadis, I., Kavitha, M., Padmanathan, J., Ashok, M. and Varadarajkumar, A. 2016. Lessons on broodstock maintenance, spawning, larval rearing and juvenile production of marine gastropods of ornamental. *Aquacult. Res.*, 1 - 12 (doi: 10.1111/are.13094).

Poutiers, J. M. 1998. Gastropods. In: Carpenter, K. E. and Niem, V. H. (Eds.), *FAO species identification guide for fishery purposes. The living marine resources of the Western Central Pacific, volume 1, Seaweeds, corals, bivalves, and gastropods.* Rome, FAO, p. 363-648.